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Abdelhamid EL BOUHADI

Cadi Ayyad University of Marrakech

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# **The Corporate Managers and Stockholders Relationship: the Moral Hazard Issue, Case of Moroccan Listed Companies**

**Abdelhamid EL BOUHADI\***

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**Abstract:** This paper deals with the moral hazard problem associated with the behavior of corporate managers. The stockholders (shareholders) cannot control *ex ante* the managers, because the latter's action is unobservable to the former, and the stockholders cannot oblige the managers to choose an action which is effective and benefit both parties. The stockholders may not modify the impact of action taken by managers *if and only if* they decide to condition the action payment to the final observable income. In the specific context of emerging markets listed companies in where the level of opacity and the inefficiency to monitor are very high, the revelation principle does not play correctly. Therefore, it is not interesting to the Agent to show his true type. In this Paper we will specifically deal with this type of problem within the framework of companies listed in the Casablanca Stock Exchange. Our approach consists to show the moral hazard issue existing between two parties: the stockholders (i.e., uninformed "Principal") and the manager namely the Chief Executive Officer (i.e., informed "Agent").

**Keywords:** Asymmetrical Information; Moral Hazard; Non-fulfilment of Contract; Governance of Listed Companies; Collusion; Cooperative Game; Stockholders; Corporate Managers; Casablanca Stock Exchange.

**JEL Classification:** G34

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\* Professor of Economics, Cadi Ayyad University, Marrakech, Morocco.

## **1. Introduction**

The complexity of management, the hierarchical power of managers and their entrenched place in the organization chart, the high-level docility of subordinates, the implication of subordinates in the corruption affairs and the disclosure of private information with “tacit” or “no tacit” knowledge and manager agreement, the subjectivity in the decision-making are the main situations of corporate moral hazard issue. In addition, the subjective evaluation and overestimation of risks and charges, the scapegoat policy that the manager can practice against his subordinates, his corrupt and dubious relations with the third parties (customers, suppliers, bankers and tax authorities) can be considered as a main source of the moral hazard problem in the case of listed companies in the developing countries. Generally speaking, the phenomenon becomes more and more complicated when the manager weaves a network of relations and forms the coalitions with other partners and some external “stakeholders”. Agents with the common interest can form implicit or explicit coalition and react commonly, as a group. In this case, an individual (or a group of individuals) is able to accept or endure the burden, despite his innocence. Indeed, it’s clear that the behavior of a group acts individually and/or collectively with a rational way. In the opposite case, i.e., where the Agent behavior diverges from that of the group, the game solution is sub-optimal in the meaning of Pareto equilibrium.

By claiming to fix the game rules, the tasks and responsibilities of the players, without being able to foresee the players’ reactions and their conflicting relationship, the governance loses its quality to manage conflicts and to improve the company performance. Indeed, the governance environment often becomes uncertain. In the case of listed companies in the pre-emerging markets, the good governance can give the priority to the efficiency if and only if it can base on the penalty/reward system.

In some organizations, the efficiency is judged purely from the ultimate goal of increased dividends and Value Company. In the other words, the measured company outputs are purely financial. Now, a penalty/reward system is only workable if and only if the action of Agent is observable (under the first rank equilibrium). Today we know that the majority of contracts which signed between the “Principal” and the “Agent” are entered into the environment which characterized by asymmetric information.

## **2. The Corporate Governance: A Literature Review**

Given the multiform character of relations between the different actors of corporate organization, we cannot aspire to a unique and common definition of corporate governance in the all-different situations. In fact, we can define the corporate governance under two possible approaches: the first is limited to a contractual vision (based on the Principal/Agent theory) and given a sort of conflict management as typical because it is based on the binary relation as shareholders/managers or property/decision or stockholders/managers. This approach takes place to reach the shareholders’ welfare through the Value Company optimization. On the other hand, the second approach is called “stakeholder governance”, in which the stakeholder’s notion is accentuated with the fact that all internal and external parties of company are actively engaged.

According to the first approach, the good governance is limited to the effectiveness of control and means to implement it with a minimal scale of costs.

Indeed, given the many difficulties to implement the control with high efficiency, the “stakeholder” approach based on the partnership and participation has been developed. It based on the arbitration between power and responsibility (Charkham on 1994). The latter takes the form of an endogenous variable. The actual power exercised by the managers is limited and administrative responsibility is shared and prolix. Indeed, the manager is considered both an Agent and Principal (Castanias and Helfat on 1991, Blair 1995, Charreaux on 1995, Charreaux and Desbrières on 1998, Rajan and Zingales on 1998, Zingales on 2002). It has been conceived within the framework of a cooperative and collusive game. In this case, once substitute the satisfaction in the optimization, the cooperation in the conflict, the tasks participation in the tasks subcontracting and division, the seeking value realization in the maximisation of utility.

Along similar ideas’, some authors attempt to resolve the agency relationship in a positive way within the framework of “stakeholder governance”. Jensen and Meckling (1976) first proposed a moral-hazard explanation of agency conflicts. Indeed, it assumed that the manager had “*an incentive to consume private perquisites, rather than investing in positive net present value (NPV) projects, increases as his ownership stake in the company declines*”.<sup>1</sup>

As quoted by McColgan (2001), “*the moral-hazard problems are likely to be more paramount in larger companies, Jensen (1993). While larger firms attract more external monitoring, increasing firm size expands the complexity of the firm’s contracting nexus exponentially. This will have the effect of increasing the difficulty of monitoring, and therefore, increase these costs*”.<sup>2</sup>

As stated by Jensen (1986), being a large and mature firm and without cash flow problems can increase the difficulties created by moral hazard. Furthermore, when managers have big funds at their disposal, without any strong demand for investment opportunities, the private perquisites consumption can increase dramatically as it becomes more costly for shareholders to monitor and determine how corporate funds are used. In developing countries, the moral hazard problems are often related both to the lack of management effort and to the decreasing in incentive to work.

Indeed, it is also noted that the contractual system of corporate governance can be established as an alternative. It is considered as a cooperative system where the various partners interact with their various interests. The cooperative game does not show the absence of conflicts between the engaging parties of company. In the conflict case, the cooperative governance mechanisms interact contractually (by using the “power” of contracts, or globally by using the “power” of extra-contractual mechanisms) in order to discipline, to alter or to bend the decision-making of manager.

Nevertheless, it remains to be seen what is necessary and sufficient means need to be set up to arrive at this coherence, at this arbitration (or trade-off) between the internal engaging parties to result in a performance of the company and a satisfaction of the external engaging parties. The American and German experiences can teach us a few more or less success examples of this. Indeed, the realization of the Value Company can result from two major elements: the participation of all the internal engaging parties in the capital of the company (the managers

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<sup>1</sup> McColgan, P. (2001), “Agency Theory and Corporate Governance: A Review of the Literature from a UK Perspective”, Department of Accounting & Finance, University of Strathclyde, 100, Cathedral Street, Glasgow, G4 0LN, United Kingdom, WP, p. 7.

<sup>2</sup> McColgan, P. (2001), op. cit., p. 8.

and employees become shareholders) and the power organization of company is based on matrix approach to organization.

Given that, we cannot consider that the stakeholder issue is a shape of perfect governance, even less as a perfect mechanism to discover the cheating and dishonesty. We note that, within a Public Offering, the partners' strategy of company is often contingent upon divergent aspirations. Both parties are motivated by the search for mostly contradictory self-interests. The highly-rated value of company can be resulted by the market speculation and by the disinformation which is maintained by the managers' manipulations especially at the moment of stock listing.

The partnership approach to governance should also enable an effective response, one that guarantees to individual an effective influence on the decision making through various means: a means of control, auditing, management of decision process, pressure and even consensus.

In reality, the process of consensus building is not without its vicissitudes for the proper functioning of the organization: the temporary hierarchical coalitions and ad hoc (between the manager and the subordinates, between the shareholders and the managers, between the Supervisory board and the Executive Board, between the Labor Unions and the manager and/or the shareholders, etc.) can be formed instead of some groups (workers, minority shareholders, etc.). Furthermore, any form of coalition is likely to cause leaks of insider information.

In this context, the process of creation and distribution of Value Company is ambivalent: on the one hand, the joint decision-making functions of management and control led to create an organizational rent. On the other hand, this organizational rent can to transform on the asymmetric informational rent.

### **3. The Stakeholder Governance and the Performance Measurement**

Under the "stakeholder governance", the concept of "performance" can be conceived in a comprehensive framework which reflects a "cooperative game".

Indeed, this game is based on a minimum of cooperation between players. In other words, players, being rational, are obliged to form coalitions in order to maximize both the total value of all the coalitions and the players' earnings.

The cooperative game theory is to determine among all possible coalitions which are stable in the sense that their members have no incentive to leave them (in order to form other coalitions, for example). This stability can be defined under several ways. This is why the games theorists are led to introduce what they call "solution concepts", i.e., the criteria to designate the solutions of a game. The cooperative game theory was founded by Von Neumann and Morgenstern in 1942. This theory is considered as a reaction to the Walrasian tradition: the behavior can be characterized as simply as in the case of an isolated individual who chooses how to allocate his resources efficiently. The Von Neumann and Morgenstern's critique of Walras General Equilibrium indicates that any individual behavior cannot be atomic and independent. Indeed, the coalitions can be formed and the exchanges are designed and viewed in a few among coalitions. In such games, there is a steady state where the absolute amounts to each will be determined with precision. Note that this solution does generally not exist. It is only a theoretical assumption. An exception is given by the zero-sum

games between two players where they, behaving rationally, can get precisely what the solution gives them in terms of earnings.

The cooperative games which characterized by existing of a formal or implied institutions can implement a solution of game. This is the characteristic function as Von Neumann and Morgenstern described it. This is a function which guarantees the earnings to the coalition members under just for their participation.

The coalitions in game are with optimal allocations. However, as part of the “stakeholder governance” of listed companies, the multiplicity and the complexity of the relations and the vague and short-lived character of coalitions can give place only to satisfactory allowances not necessarily quite pecuniary. The very nature of the “stakeholder governance” is subject to policy changes notably because the existence of individual and/or small groups’ with non-cooperative behavior. The game of compromise which characterizes the “stakeholder governance” may tend to a non-cooperative game. In both cases, the measurement attempt reflecting the “*True Value Company*” is impossible to perform.

The “*balanced scorecard*” proposed by Kaplan and Norton (1997) is conceived to take into account the past and future multiple sources of Value Company creation and to serve as a means of internal communication for all partners. Nevertheless, this means is not completely effective because it does not allow the matching of value to its respective sources. Similarly, it does not take into account the behavior of agents’ strategies when the decision is implemented and when the financial markets impact is caused.

The “Value Company” is often subject to the strategic manipulation by the insider traders and/or the shareholders. The imprecision in the determining value is accentuated when we are face to cases dealing with measuring the performance of companies operating in the emerging and pre-emerging stock markets.

By the summary, we can say that the stakeholder approach to measurement of “Value Company” remains global, inaccurate and not strategic.

#### **4. The Governance of the Casablanca Stock Exchange Listed Companies**

The complex relationships between the shareholders and the stakeholders in the Moroccan Company and the hybrid nature of its internal management underlie a type of ambiguous and hybrid governance in which the main feature is the hierarchy of functions and tasks. The result of this is probably the poor quality of management and the big slack of organisation chart. This has a negative impact on the future company development and on its external position. The Moroccan company is weak-competitive against its rivals. One can only regard it as a company seeking rents situations, it does not seek to be sustainable and innovative. She does not forge its history and culture.

What is true for Moroccan companies is also true for its managers. This fact is widely recognized in the case of public enterprises. The “Government” as being the “Principal” (uninformed party of game) is facing to an “Agent” (informed party) which is enriched financially and more rooted in the time. In the developing countries, the “Government” is in a situation where he would be unable to reduce the information asymmetry because it deals with a coalition deeply rooted and with the behavior is based on fraud, corruption and embezzlement of public funds. Generally, in such cases, the “Agent” is not averse for any risk

because he try to contribute (by fraud) to self-enrich before his eventual dismissal. The second best solution of this situation can be the privatization.

If the company becomes partially private, the managers' behavior after the privatization (if they not be replaced) will change slowly.

The listed companies in the CSE have the stakeholder governance very complex. It depends largely on the organizational structure within its premium business. The administrative and/or managerial hierarchy and its roots can be considered the cause of the multiplicity of conflicts of interest among stakeholders.

The finding about the good governance of listed companies on the CSE deserves a special attention. We see in these modes of business organization that the management and governance are heterogeneous, reflecting the situations of agreement and conflict and establishing a level playing contradictory based on both conflict and partnership, power hierarchical and accountability, the collective irresponsibility in case of crisis or conflict and self-accusation (scapegoat) for a major danger. The solution is a game where the equilibrium of organization is mixing. It is a mixing of Stacklbergian, Cournotian and Nashian Equilibria.

The modelling of such a game is a technical problem in which the quality of players and their identities are constantly changing and the equilibrium mentioned above may also change. On the other hand, the standard Principal-Agent in terms of moral hazard can characterize both parties and many more situations where a conflict of interest between managers and their partners is revealed.

**Table 2: Stakeholder Matrix: Types of conflicts and types of games**

	<b>Stockholders</b>	<b>Managers</b>	<b>Employees</b>
<b>Stockholders</b>	There are the cognitive conflicts about the choice of investments, about the dividends, the determination of the Market Value Company (selling price, price of the issuing operation), etc.	Cognitive conflicts, conflicts of interest, conflicts about the making-decisions and financing policy.	Cognitive conflicts, contractual conflicts with moral hazard and adverse selection; conflicts about cost rationalization, about value-distribution and participation-sharing in the case of capital increase, etc.
	<b>Type of game:</b> Stackelberg Collusion.	<b>Type of game:</b> Nash Equilibria in Non-Cooperative Game.	<b>Type of game:</b> Nash Equilibria in Non-Cooperative Game.
<b>Managers</b>		The CEOs cognitive conflicts, Conflicts between the hierarchy members about the choice of investments and its implementation.	Cognitive conflicts, contractual conflicts with moral hazard and adverse selection; Conflict about the management skills remuneration, recruitment, working conditions and dismissal; conflicts about the choice of investment in research and development.
		<b>Type of game:</b> Cournot collusion game + Stackelberg Collusion.	<b>Type of game:</b> Nash Equilibria in Non-Cooperative Game.

Employees			Cognitive conflicts, conflicts of interest to career advancement, contractual conflicts, conflicts about reports on the quality of employees at work, conflicts about power-sharing to strike.
			<b>Type of game:</b> Cournot collusion Game + Nash Equilibria in Non-Cooperative Game.

A “good governance of companies” requires a permanent internal control provided by the shareholders power.

According to the World Bank<sup>3</sup> and International Monetary Fund<sup>4</sup> assessments, significant progresses in improving corporate governance have been completed. These progresses have focused in particular on the Higher Standards for managerial accountability and Shareholders’ rights. However, both evaluations have shown the limits of regulatory power in Securities, especially that of the Securities Commission (CDVM) for which the power and resources are very low. Barriers to effective implementation of laws have been shown.

Besides, a 2007 International Finance Corporation press release commented that the country’s corporate governance was “not in accordance with global standards” and that a national corporate governance code to complement existing Moroccan laws and regulations as well as the creation of an Institute of Directors of Moroccan corporations was largely needed.

According to the Saidi and Nadal<sup>5</sup> article, the Casablanca Stock Exchange plays an important role in the implementation of corporate governance in line with international standards. The Casablanca Stock Exchange is the largest market in the Maghreb and the third in Africa, with a market capitalization of 73 percent of GDP in 2006 and 98 percent of GDP in 2007. However, the Saidi and Nadal article emphasizes that the Moroccan domestic stock market still plays a limited economic role which is not proportional to its volume. Among the some 73 listed companies in 2007, market concentration remains very high (the top two stocks (IAM, AWB) account for 40 percent of market capitalization in 2010).

In its 2009 Doing Business report, the World Bank also describes the Moroccan investor protection as being weak. *“The indexes vary between 0 and 10, with higher values indicating greater disclosure, greater liability of directors, greater powers of shareholders to challenge the transaction, and better investor protection. Morocco scores 6.0 in the disclosure index against a regional average of 5.9 and an OECD average of 5.9. It scores 2.0 in the Director*

<sup>3</sup> World Bank, “Evaluation de la gouvernance d’entreprise au Royaume du Maroc,” May 2003. Available from World Bank website. Accessed on March 20, 2009. (in French only) (WB 2003).

<sup>4</sup> Tahari, A. et al., “Financial Sector Reforms and Prospects for Financial Integration in Maghrib Countries,” Working Paper No. 07/125, Washington D.C.: IMF, May 2007. Available from International Monetary Fund website. Accessed on March 20, 2009. (Tahari et al. 2007).

<sup>5</sup> Saidi, N., and Nadal, N., eds., “Corporate Governance in MENA Countries: Improving Transparency and Disclosure,” The Second MENA Regional Forum on Corporate Governance, Beirut, June 3-5 2004. Available from Hawkama website. Accessed on March 20, 2009. (Saidi & Nadal 2004).



*Liability Index against a regional average of 4.8 and an OECD average of 5.0 and 1.0 in the Shareholder Suits Index against a regional average of 3.7 and an OECD average of 6.6.”*<sup>6</sup>

#### **4.1. The Characteristics of Listed Companies in Casablanca Stock Exchange**

The average turnover rate of shares does not exceed 10%. There are very few small shareholders. The minority shareholders are poorly protected despite the efforts of the judicial law of 2004. The capital structure is highly concentrated. Pyramidal structures and cross shareholdings between groups remain dominant despite the effort to support the portfolio diversification. The most of listed companies are controlled by one or several Moroccan and/or Foreign holding companies and are often organized around a financial firm (banks and insurance companies). The holding company at the top of the pyramid is not necessarily listed in the stock market.

Most companies listed in the CSE were, initially, public or semi-public. Others are private companies whose the capital is open to the domestic and foreign investors (private banks, insurance companies and financial groups). A very few family-held companies have been listed in the market.

Concerning the Moroccan public limited companies, the law is modelled on the French jurisdiction. It should to have a structure with the Manager namely “Chief Executive Officer” (CEO) who represents the company faced with external stakeholders (shareholders, third parties, tax authorities, etc.). The CEO is civilly and criminally responsible to shareholders and third parties.

The Moroccan public limited company should to apply an external audit, which is made by the auditor. Concerning this subject, the 17/95 law of public limited companies oblige the auditors to be responsible to give the good and fair treatment in favor to the all shareholders. The auditors shall submit special reports when the sustainability of the enterprise is compromised and that the company is in danger of bankruptcy. Indeed, the auditors constitute an essential element of good corporate governance.

However, in the context of information theory, the auditors are available to privileged information as well as managers of the company. In this case, the framework of game will become increasingly complex.

***Table 1. The no-cooperative game participants.***

<b>The Informed parties</b>	<b>The No-informed parties</b>
The directors; The managers; The auditors.	The shareholders; The third parties; The employees.

The game can be both cooperative and no-cooperative. In the first case, the coalitions are formed in order to constitute the parties in game. When participants in the game are numerous, the informed players form explicit or implicit coalitions with a large solidarity. However, when the conflicts of interest are not exacerbated and the functioning of company

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<sup>6</sup> U.S. Department of Commerce, “Doing Business in Morocco: 2009 Country Commercial Guide for U.S. Companies,” March 2009. Available from U.S. & Foreign Commercial Service and U.S. Department of State website. Accessed on March 17, 2009. (U.S. DoC 2009), quoted by eStandardsForum, Best Practice Report, Morocco, 2009, <http://www.estandardsforum.org/morocco/standards/principles-of-corporate-governance>.

seems regular, the efforts of uninformed agents are dispersed. Their decisions are not consistent and coordinated. The cases of Enron and WorldCom have shown us its false healthy image while it headed toward bankruptcy.

It is noting that no express obligation is required in the broadcasting of the structures of governance and the commercial or industrial policies adopted by companies. In addition, it is not compulsory to discuss, publicly, the predictable risk factors.

The shareholders representing 10 % of the capital can make a demand to the court to appoint an expert in order to examine a controversial management decision took by board of directors. They can institute an action at law against the directors. The compliance with the law is ensured by the commercial courts. In addition, the Commercial Code provides for the possibility of settling disputes by arbitration.

It is planned to establish arbitration centers in the chambers of commerce. Today, just the International Chamber of Commerce of Casablanca provides the arbitration. The disagreements regulation is made by basing on the material evidences. The shareholders cannot sue an officer if they have no proof. In the parallel way, the other institutions (the Deontological Council for Securities or the Council for the Code of Ethics in Securities Markets (CDVM<sup>7</sup>) and the Managing Company of CSE can exercise some main tasks of control and address the penalties and sanctions against the listed companies and brokerage firms. However, the control of the public information, the decision power of sanction and the financial, technical, institutional and human means of the control authorities are limited. The power control of CDVM in terms of procedures and efficiency remains insufficient; it depends of the Finance Minister.

This one strengthens the autonomy of Deontological Council for Securities and its capacity to finalize and to concretize its intervention through inquiries and procedures. The penalty power wants strengthened but it remains insufficient and difficult to implement it. The reason is the lack of the means and control techniques.

According to the 1-93-212 Law, every person having access to confidential information is considered as an informed agent holding privileged and asymmetric information. However, the unity control of CSE holds a large power to halt the shares quotation. Until today, no lawsuit or criminal charges against insiders have occurred.

#### **4.2. The Information's Board Members and Managers, and their Payment**

The presence of one administrator in various boards of various companies can undermine transparency. It creates information rents and gives rise to "suspicious" coalitions.

In order to improve the company functioning and revitalize the Moroccan Stock Market, the Extraordinary General Meeting (EGM) may grant some privileges to certain employees or shareholders in connection with a capital increase. Article 10 of the Finance Act in 2001 had introduced the plans of stock options for employees. Share purchases may be made at a discount of up to 10% of the market price and can be used over two years. Employees must keep the shares for three years for the capital gain is not taxable.

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<sup>7</sup> Conseil Déontologique des Valeurs Mobilières.

It should be noted that in an economy such as those of Morocco which characterized by sluggish and weak Stock Market Transactions, the privileges and incentives to hold the shares remain not sufficient, especially when it comes to small shareholders.

In the case of boards with a single governing body, at least two thirds of the directors cannot become managers of the company. They form the supervisory board which oversees the conduct of management. Their functions can be summarized in the following points:

- Establish the board members remuneration;
- Provide the independent assessment and control;
- Authorize the Management Board to delegate some of its functions;
- Give orders to the Management Board to provide the relevant information and explanations about the taken decisions, etc.

It also be noted that the Moroccan company statutes may provide when some important management decisions will be taken, the supervisory board should firstly approve it. In the case where the supervisory board refuses the approval, the Management Board shall be entitled to refer the matter to the Ordinary General Meeting (OGM). This corroborates the idea of an *ex ante* monitoring of the making-decisions; it is a preventive measure to limit or thwart any decision which is based on the conflicts of interest.

The lack of transparency remains a fundamental problem of corporate governance in Morocco. Information about the Management Board quality is virtually nonexistent. The opacity in the administrative machinery demonstrates the ambiguity of the relationship between the director and the president. According to the World Bank Report<sup>8</sup>, “the MENA countries present a model of transparency which is largely limited and hesitant, and it is no coincidence that this region is among ones in which the empirical data about the quality of governance is weak. No country guarantees to its citizens the right to access to information relating to corporate governance, and some even actively try to suppress that right.

In Morocco, the Code of Good Corporate Governance Practices has been adopted in 2008 after the joint work of several official and professional bodies (Ministry of Finance, CGEM, CDVM, Bank Al-Maghrib, etc.). It is a compendium of guidelines and recommendations aligned to the international benchmarks and the principles of good governance set out by OECD.

If the measure deserves a lot of encouragements, what about its implementation? The Securities Commission (CDVM) tried to take stock of listed companies’ governance. Among 75 listed companies that have received the questionnaire, only 46 responded to the questions. The results show that good governance is not common for listed companies. Indeed:

- 41% of listed companies have not yet adopted the Moroccan Code of Good Corporate Governance Practices;
- 79% of companies still choose to manage with only one-tier board of directors;
- The separation of powers among the president and general manager for its part is not respected in 54% of respondents;
- 60% of listed companies don’t have a compensation and appointment committee;

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<sup>8</sup> World Bank, « Vers une meilleure gouvernance au Moyen-Orient et en Afrique du Nord », Rapport, 2003, Banque Mondiale, p. 4.

- 89% of companies in the sample reported having non-executive directors in their governance bodies;
- 87% of sampled companies do not broadcast information relating to the executive compensation;
- 57% of listed companies haven't developed the incentive plans for executives and employees;
- 90% of companies do not publish quarterly indicators.

According to the Law No. 20-05-2008 amending Limited Company Law No. 17/95, the companies have the choice between a unique board of directors (first case) and a two floors structure (second case), which is composed by both a supervisory board and a board of directors. In the first case, one person exercises both the control function (Président du conseil de surveillance) and the General Manager function (CEO). The CEO represents the company as regards to the third parties and has large responsibilities. He can delegate some his responsibilities, but remains entirely responsible for any malpractice committed by his subordinates. Some Moroccan public companies are adopted the two floors structure in order to avoid the large responsibility assumed in the case where there is accumulation of CEO and supervisory board director positions.

In the two cases, the appointment procedures are similar. The law didn't fix the limit of number of boards in which an individual may be a member. Nevertheless, at the same time, one member of supervisory council cannot be as a member among in the director's board. However, there is no law provision forbidding the members of supervisory council to be engaged by the company.

## **5. The Modelling of Contractual Relationship between Shareholders and Managers**

In 1932, Berle and Means found that the new idea of the capitalism is separation between ownership and management<sup>9</sup>. They also found that exist some disconnect between the CEOs interests and those of shareholders.

This managerial approach of the firm was subsequently studied by Jensen and Meckling. They had considered that all the relationships established within and outside the firm constitute the "nexus of contracts".

The problem of moral hazard related to the behavior of the agent (managers) is still valid, especially in emerging and developing countries.

The role of good governance<sup>10</sup> is to "secure" and "increase" the financial investment return (Shleifer and Vishny, 1997). This can be achieved through the establishment of a number of organizational and institutional mechanisms based on the control, incentives and participation. The moral hazard problem appears when the objectives of the parties signing a contract differ. In the case of the shareholders/managers relationship, the managers (considered as autonomous) can pursue a strategy that serves their interests at the expense of those of

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<sup>9</sup> In the late 1920s, 88 of the 200 largest U.S. firms are headed by a manager. Today it is virtually all medium and large enterprises are run by managers.

<sup>10</sup> In the other words, shareholders are looking for by this system of governance the optimality of making decisions of managers. They research to know the actions that can reduce the agency cost and lead to the better financial performance of the firm.

shareholders. However, these latter would incentive the managers in order to take the decisions that maximize their outcomes. Indeed, two cases may arise:

- The Principal (Shareholders) can observe the agent's action (Managers). It is the First-Best Equilibrium. The Principal in this case may order the agent to choose the effective action and then choose the wage that achieves optimal risk sharing between two parties. It is often assumed that the Principal is risk-neutral and can justify this assumption if the Principal can diversify the risks associated with its relationship with the Agent.<sup>11</sup> However, the Agent is supposed risk-averse (being small, it is more difficult to him to diversify this risk. The optimal risk-sharing requires that the Principal should ensure completely the Agent by paying him a constant wage and bear all risks associated with their common activity;
- In the Second-Best Equilibrium situation, which is among the most common, the Principal can observe just the output which is a variable correlated with the Agent's action. If the principal is risk-neutral, the First-Best Solution is to give a constant wage to the Agent. But this prompts the agent to choose selfishly action which is least costly for him and not optimal in general. This case is widely observed in the Moroccan listed companies, since the decisions taken by the managers are slow and less effective.

Solving the moral hazard problem requires that the principal (shareholders) must offer to the Agent a contract which can arbitrate between two things:

- The risk-sharing, which means that the wage of the Agent depends very lightly in output;
- The incentives, which pushes the Principal to condition the wage to the output.

Note that if the Agent is risk-neutral<sup>12</sup>, the arbitrage cannot take place: the Principal required the agent to bear all the risks. In this case, the Second-Best Equilibrium coincides with the First-Best Equilibrium (in this case, we say that the Principal sells the company to the Agent).

However, we note that companies listed in pre-emerging markets (Morocco, among others), the agent may accept a contract in spite of the virtual absence of Principal incentive constraints. The intention of the agent is to continue his personal interests despite the fact that his salary is below to reservation wage.

## 5.1. The Model

Let  $n$  actions  $a$  which taken by the Manager. The  $n$  actions are a discrete number:

$$A = \{a_1, \dots, a_n\}$$

These actions<sup>13</sup> produce  $m$  outcomes which are noted:

$$O = \{o_1, \dots, o_m\}$$

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<sup>11</sup> In the other words, the shareholders are risk-neutral if they can arbitrate between the risk (bad action taken by the Agent and causing a potential loss) and the income given from the Agent good action.

<sup>12</sup> This case is very inconvenient. Nevertheless, it may appear, usually in developing countries, where the enterprises are poorly managed, the control is absent and inefficient.

<sup>13</sup> We remember that the Agent action is unobservable by the principal.

It should be noted that the random relationship<sup>14</sup>, which is an application between the taken decisions and the corresponding outcomes, is one-to-one injective function. Note also that the output is not known in advance. It is an *a priori* signal that provides the information on the action selected by the Agent. This signal can be simply identified by the surplus of relationship.

For each decision, the surplus is different. It may be high, and also be low. This surplus is just an *a priori* assessment: for each action, we associate a surplus with a probability of realization.

Finally, the probability covers the type of action that the manager can take.

**Proposition 1:** The management misperformance in listed companies is an increasing function of the lack level of monitoring and opacity of information system.

The misperformance persistence in listed companies can lead, either to dismiss the officer, either to the earlier bankruptcy of company.

Now, we assume that if the Agent chooses the action  $a_i$ ,  $i \in [\underline{D}, \overline{D}]$ , the Principal observes the outcome  $o_j$ ,  $j \in [\underline{O}, \overline{O}]$  (the observed outcome is just a signal that may be sometimes, false) with a probability  $\pi_{ij}$  strictly positive.<sup>15</sup>

$$\pi_{ij} = \pi_{11} + \pi_{22} + \pi_{33} + \dots + \pi_{nm} = \sum_{i=1}^n \pi_i \sum_{j=1}^m \pi_j > 0$$

It is necessary to indicate that:

- The decisions interval  $[\underline{D}, \overline{D}]$  is a compact (bounded and closed). The set of possible decisions is finite;
- The outcomes interval  $[\underline{O}, \overline{O}]$  is also a compact (bounded and closed). The set of possible outcomes is also finite;
- The probability law  $\pi_{ij}$  is an injective function.

The only publicly observable variable is the outcome of the action taken by the Agent. Here, the outcome is measured by financial performance<sup>16</sup> of the listed company. Contracts take thus necessarily the shape of a reward conditioned in the performance. If the Principal (the shareholders) observes the outcome  $o_j$ , he pays to the Agent a salary  $w_j$  and keeps  $(o_j - w_j)$  for himself.

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<sup>14</sup> It defined also as a Technology.

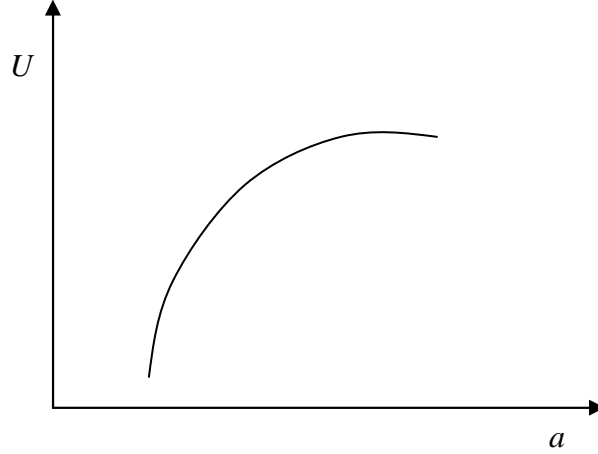
<sup>15</sup> Note that some probabilities can be zero. In which case, the Principal takes this opportunity to exclude some actions. The Principal could then penalize the Agent if the outcome is  $o_j$ , since the  $o_j$  observation indicates us that the Agent didn't choose the optimal action  $a_i$ .

<sup>16</sup> Performance of listed company is usually measured by the operating profit, the dividend or the PER (Price Earnings Ratio) or in the simply way by stock price.

The utility function of Von Neumann-Morgenstern for the Agent is:

$$U(w, a) = u(w) - a$$

where,  $U$  is monotonous<sup>17</sup> in the effort and strictly concave;  $a$  is the action corresponding to the effort provided by the Agent.



The utility of the Principal is:

$$O - w$$

## 5.2. Agent Schedule

When the Principal offers to the Agent a contract  $(w_j)$ , the Agent chooses his action by solving the following program:

$$\max_{i=1, \dots, n} \sum_{j=1}^m \pi_{ij} (u(w_j) - a_i)$$

So, before signing the contract, the Agent sees if the salary and emoluments, bonuses, benefits, decision-power, working conditions are equal to the provided effort or no.

**Proposition 2a:** The principle of taxation Hammond, linked to the principle of revelation, playing here in full as in the case of adverse selection: The revelation principle states that may be limited to direct mechanisms (where the agent announces his information ) and so revealing (the optimal Agent strategy is to announce his true type. This is a situation where it is in the Agent interest to show the truth).

**Proposition 2b:** In the specific context of emerging markets listed companies in where the level of opacity and the inefficiency to monitor are very high, the revelation principle does not play correctly. Therefore, it is not interesting to the Agent to show his true type.

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<sup>17</sup> The assumption of monotonicity of utility function is a standard hypothesis in economic well-being. Agent preferences are assumed not saturated and the function is continuous.

If the agent chooses  $a_i$ , the  $(n-1)$  incentive constraints  $(IC_k)$  are normally checked for each  $k = 1, \dots, n$  and  $k \neq i$ . The incentive constraints are:

$$(IC_k) \quad \sum_{j=1}^m \pi_{ij} (u(w_j) - a_i) \geq \sum_{j=1}^m \pi_{kj} (u(w_j) - a_k)$$

The agent will accept the contract only and only if it gives him a sufficient utility, which equal at least to reservation utility  $\underline{U}$ , i.e., what he can obtain elsewhere (in the market of managers) <sup>18</sup>. If the preferred action of the Agent is  $a_i$ , the participation constraint (or the Individual Rationality) is writing as:

$$(IR) \quad \sum_{j=1}^m \pi_{ij} (u(w_j) - a_i) \geq \underline{U}$$

It is rational that the agent accepts the contract if the wage offered by Principal is higher than his reservation utility.

Proposition 3: As part of pre-emerging market listed companies in which the level of monitoring managers is low, the contract is based not only on the wage but also on its potential strategy to give to Agent the Rooting for empowerment. The agent accepts the contract even though the wage offered by Principal is well below his reservation wage.

In reality, the incentive constraints that the Principal may make will not be implemented: one can say that the reward/punishment system has failed. Therefore, a “normal” Agent behavior is synonymous with irrationality. It comes:

$$(IR) \quad \sum_{j=1}^m \pi_{ij} (u(w_j) - a_i) < \underline{U}$$

### 5.3. The Principal Schedule

The Principal must choose the contract  $(w_1, \dots, w_m)$  which maximizes his expected utility, while taking into account the impact of this contract on the Agent decisions.

$V(o, w) = o - w$  is the Principal utility (difference between outcome and Agent wage).

Indeed, the maximum of his expected utility can be written as:

$$\max_{(w_1, \dots, w_m), i} \sum_{j=1}^m \pi_{ij} (o_j - w_j)$$

---

<sup>18</sup> Generally speaking, in the market managers, the average salary is determined in connection with at least three factors: the qualifications of manager, the released income and the accumulated experience in the field of business management and making-decisions. Thus, it seems that the information about the manager is very irrelevant and not complete. We think that the reservation utility of Agent (i.e., his next-best opportunity) does not inform us about true quality of the manager.



under,

$$\begin{cases} (IC_k) & k = 1, \dots, n \text{ et } k \neq i & (\lambda_k) \\ (IR) & & (\mu) \end{cases}$$

where  $a_i$  is the chosen action at the equilibrium and the numbers in parentheses represent the multipliers (positive) associated with constraints. Note that the maximization is with respect to the wages ( $w_i$ ) and actions  $a_i$ , in which the Principal can indirectly control it.

Under fixing  $a_i$ , the Lagrangian to Schedule maximization is written as:

$$L(w, \lambda, \mu) = f(w) + \sum_{k=1, k \neq j}^m \lambda_k \cdot g_k(w) + \mu \cdot g(w)$$

where,

$$f(w) = \sum_{j=1}^m \pi_{ij} (o_j - w_j)$$

$$g_k(w) = \sum_{j=1}^m \pi_{ij} (u(w_j) - a_i) - \sum_{j=1}^m \pi_{kj} (u(w_j) - a_k)$$

$$g(w) = \sum_{j=1}^m \pi_{ij} (u(w_j) - a_i) - \underline{U}$$

and its partial derivation from  $w_j$  gives us the following thing:

$$\frac{1}{u'(w_j)} = \mu + \sum_{k=1; k \neq i}^n \lambda_k \left(1 - \frac{\pi_{kj}}{\pi_{ij}}\right)$$

At first level, we have an efficient sharing of risks, i.e., a constant wage that given by:

$$\frac{1}{u'(w_j)} = \mu_0$$

$\mu_0$  is chosen in order that the individual rationality constraint (IR) is in the equality. The difference between these two equations is derived in the positivity of some multiplier  $\lambda_k$ . In other words, the incentive constraints are saturated at the optimum: some manager's actions  $a_k$  give to Agent the same utility as  $a_i$ . At the equilibrium, there's at least one  $\lambda_k$  strictly positive (otherwise, we could neglect the incentive constraints and the moral hazard problem would disappear).  $w_j$  depends on  $j$  through the  $\pi_{kj} / \pi_{ij}$  terms.

The  $\pi_{kj} / \pi_{ij}$  terms play a fundamental role in the moral hazard problem analysis. Its meaning can be found by analogy with the classical mathematical statistics. In fact, the problem of Principal is consisting partly to try to infer from the outcomes observation, the action that the

agent has been chosen. With the statistical terms, given the “sample”  $o_j$ , the Principal seeks to estimate the “parameter”  $a$ .

This problem can be solved by calculating the maximum likelihood estimator of  $a$ , i.e.,  $a_k$  such as  $\pi_{kj}$  is the highest one.

So there is equivalence between:

$a_i$ , which is the maximum likelihood estimator of  $a$  knowing  $o_j$

and,

$$\frac{\pi_{kj}}{\pi_{ij}} \leq 1, \quad \forall k$$

Now, we are fixing the optimal action  $a_i$ ; as all multipliers  $\lambda_k$  are nonnegative and  $1/u'$  is an increasing function, the wage  $w_j$  corresponding to the outcome  $j$  will be as high as the maximum of likelihood  $\pi_{kj} / \pi_{ij}$  will be smaller than 1. Therefore, it will be higher if  $a_i$  is the maximum likelihood estimator of  $a$  and knowing  $o_j$ : the Principal pays a high wage when he observes an outcome which is directly inferred to the optimal action of the Agent. However, he will pay a lower wage if he observes that the outcome is very unlikely if the agent has actually chosen the optimal action.

## 6. Conclusion

In conclusion, referring to the proposals listed below, we say that it is mandatory and urgent to reform the monitoring system of managers and public information. The incentive constraint cannot be implemented in the case where the control system is failed. The lack of information efficiency in the pre-emergent market like CSE leads to a large deficit of good governance of listed companies.

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